

IC20 FastPCT/PO 08 NOV 2005
Claims 1, 19 and 36

(as amended during Chapter II procedure)

5 1. A process for the treatment of at least one particle (10 - 14) with at least one reaction liquid (20, 21) in a main channel (30) of a fluidic microsystem (100), with the steps:

- movement of the at least one particle (10 - 14) with a carrier liquid (40) flowing in a longitudinal direction of the main channel (30) up to a holding device (50, 52, 57),
- at least a temporary holding of the at least one particle (10 - 14) under the action of a holding force exerted by the holding device (50, 52, 57), and
- supplying of the reaction liquid (20, 21) from at least one lateral channel (31, 36) into the main channel (30) so that the at least one held particle (10 - 14) is rinsed by the reaction liquid (20, 21), wherein
- the holding device (50, 52, 57) is arranged downstream after a mouth (32, 37) of the lateral channel (31, 36) in the main channel (30) and the reaction liquid (20, 21) flowing through the holding device (50, 52, 57) with a direction of flow running in the longitudinal direction of the main channel (30)

characterized in that

25 - the holding of the at least one particle (10 - 14) comprises a contactless fixing with a holding force acting in a contactless manner.

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30 19. A fluidic microsystem (100), especially for the treatment of at least one particle (10-14) suspended in a carrier liquid (40), which comprises:

- a main channel (30) adapted to receive a flow of the carrier liquid (40) and to which a lateral channel (31, 36) for supplying a reaction liquid (20, 21) is connected at least one mouth (32, 37), and

5 - a holding device (50, 52, 57) adapted to hold at least temporarily the at least one particle (10-14), wherein

- the main channel (30) is adapted to receive a flow of the reaction liquid (20, 21) that flows with a direction of flow running in the longitudinal direction of the main channel

10 (30) through the holding device (50, 52, 57), and

- the holding device (50, 52, 57) is arranged downstream after the mouth (32, 37) of the lateral channel (31, 36),

characterized in that

- the holding device (50, 52, 57) is adapted for a contact-
15 less fixing of the at least one particle (10 - 14).

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36. An electrode arrangement (52) for the contactless holding
20 of suspended particles in a channel of a fluidic microsystem,
which arrangement comprises at least three pairs of elec-
trodes (53, 54, 55), the electrodes (53, 54, 55) being re-
spectively arranged on bottom surfaces and cover surfaces of
the channel and each comprising a central electrode (53) and
25 two lateral electrodes (54, 55), the central electrodes (53)
being adapted to form a dielectrical field barrier trans-
versely to a direction of flow (A) in the channel when loaded
with a high-frequency alternating voltage, and the lateral
electrodes (54, 55) being arranged in front of the central
30 electrode (53), relative to the direction of flow (A).